

CLAIMS

[1] A condition detecting sensor, comprising:

5 a first antenna arranged on one of the two members moving toward
and away from each other,

a second antenna arranged on the other member and paired with the
first antenna,

a generator generating signal waves,

10 a mixer connected to the first antenna, the second antenna, and the
generator and mixing signals, and

a band-pass filter connected to an output of the mixer and passing
only prescribed frequency bands,

15 wherein the condition detecting sensor senses a distance between the
two members, as well as the presence of objects between the two members, by
sensing the strength of the signal outputted from the band-pass filter.

[2] The condition detecting sensor according to claim 1, comprising an
S-meter measuring the strength of signals outputted from the band-pass
filter.

20 [3] The condition detecting sensor according to claim 1, comprising an
S-meter measuring VSWR values in the output of the band-pass filter.

[4] The condition detecting sensor according to claim 3 performing the
sensing of objects by taking the second derivative of the VSWR value.

[5] The condition detecting sensor according to claim 1, comprising a
downconverted signal generator generating a downconverted signal wave,

25 wherein the band-pass filter detects only a difference between the
signal wave and the downconverted signal wave.